UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/827,008	04/05/2001	Richard M. Mathis	20804.00400	4898

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EXAMINER
TSAI, SHENG JEN

ART UNIT	PAPER NUMBER
2186	

DATE MAILED: 11/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
Office Action Summary		09/827,008	MATHIS, RICHARD M.
		Examiner	Art Unit
		Sheng-Jen Tsai	2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _28 September 2005_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-73_ is/are pending in the application.

    4a) Of the above claim(s) _11-35_ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-10_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) _36-73_ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This Office Action is taken in response to Applicant's Amendments and Remarks

filed on September 28, 2005 regarding application 09/827,008 filed on April 5, 2001.

2.   Claims 1-73 are pending in the application under consideration.

Claims 11-35 have been cancelled.

Claims 36-73 have been added.

3.   ***Response to Amendment and Remarks***

Applicants' amendments and remarks have been fully and carefully considered

with the results set forth below.

Response to Amendment on Specification and Remarks on claim 8

Applicant amended the Specification section (page 53, line 13) to add the text of

"Actions **542** and **543** maintain control device stability after disabling memory access by

placing a disable pattern on the bus."

This amendment is considered "new matter" since the original Specification filed

on April 5, 2001, is completely silent on the subject matter of "control device stability."

Therefore, it will not be entered for the record.

Further, the proposed amendment on the Specification recites "Actions **542** and

543 maintain control device stability **after** disabling memory access by placing a disable

pattern on the bus," but claim 8 recites "the step of disabling reading and writing of the

program memory chip comprises maintaining control device stability." There is a

difference between the two scenarios.

The proposed amendment on the Specification states that "maintaining control device stability" is achieved "**after** disabling memory access," which is more in line with the recitation of "the step of maintaining control device stability comprises disabling accessing the program memory chip," which is certainly different from the recitation of claim 8 that "the step of disabling reading and writing of the program memory chip comprises maintaining control device stability." In other words, the "cause" and "effect" elements are reversed in the two scenarios.

Therefore, the rejection of claim 8 under 35 U.S.C. 112, first paragraph remains the same as stated in the previous Office Action.

Response to Remarks on claim 1

Applicant contends that a "signature" should be computed from the content of the program memory. However, the wording of claim 1 concerning the signature includes "the program memory content is <u>associated with</u> a previously <u>stored</u> signature," and "verifying whether a present signature is equivalent to the previously stored signature to obtain a verification result." Claim 1 does not recites how a signature is generated.

<u>It is noted that if Applicant's intent is to qualify a signature as computed from the program memory, the intention has to be clearly reflected in the claim language</u>.

Charron teaches that "the random number is <u>stored</u> as a <u>personality data</u> in a memory when the electronic apparatus is switched on <u>the first time</u>" (abstract). This personality data is certainly one form of "signature" and is <u>stored</u>, hence associated with, the program memory.

Therefore, the examiner's position regarding the status of claim 1 remains the

same as stated in the previous Office Action.

Response to Remarks on claim 2

Applicant contends that "reading a voltage value only produce a voltage number

but is not a computation." The examiner disagrees with this assessment for the

following reason.

In Charron's invention, the process of generating the "personality data" requires

not only "reading a voltage value" but also "analog-to-digital converting to convert an

analog voltage value into a digital magnitude" (column 2, lines 3-4). It is well known in

the art that an analog-to-digital converting operation includes manipulation of numbers,

hence a form of computing.

Applicant also contends that claim 2 recites the element of "independently

computing ..." which is not taught by Charron.

However, claim 2 does not specify "which entity" the "computing process" is

"independent of." The apparatus and method disclosed by Charron is certainly

independent of any other devices external to the enclosed unit shown in figure 1.

Applicant further contends that, by mentioning that Charron citing Brunner (US

4,727,544) as one of the prior art in the disclosure, the rejection of claim 2 should be

under 103(a) instead of 102(e). The examiner disagrees with this assessment for the

following reason.

Note that the examiner does not "quote" from the disclosure of Brunner at all. All

the material relied on by the examiner for the rejection of claim 2 comes from the

disclosure of Charron only. Therefore it is a rejection based on a single reference, thus 102(e), even though Charron does makes reference to Brunner as part of the Background of Invention.

Therefore, the examiner's position regarding the status of claim 2 remains the same as stated in the previous Office Action.

Response to Remarks on claim 3

Applicant again contends that Charron's invention does not teach "producing a signature." This issue has already addressed earlier in "*Response to Remarks on claim 1*."

Therefore, the examiner's position regarding the status of claim 3 remains the same as stated in the previous Office Action.

Objection to Specification

4.   The amendment filed on September 28, 2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is the element of "**maintaining control device stability**."

Applicant is required to cancel the new matter in the reply to this Office Action.

Election/Restrictions – Election by Original Presentation

5.   Newly submitted claims 36-73 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Restriction to one of the following inventions is required under 35 U.S.C. 121:

    a.   Claims 1-10, drawn to a secure memory device, classified in class 711,

subclass 163.

    b.   Claims 36-60, drawn to structure, components and operations of a

consumer interactive device/casino gaming unit including a signature calculator,

classified in class 463, subclass 29.

    c.   Claims 61-66, drawn to a memory socket unit, classified in class 361,

subclass 785.

    d.   Claims 67-72, drawn to remote and/or wireless operations, classified in

class 463, subclass 39; or in class 446, subclass 154.

Since applicant has received an action on the merits for the originally presented

invention, this invention has been constructively elected by original presentation for

prosecution on the merits. Accordingly, <u>claims 36-73 are withdrawn from consideration</u>

<u>as being directed to a non-elected invention</u>. See 37 CFR 1.142(b) and MPEP §

821.03.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7.   Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with

the enablement requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to enable one skilled in the art to which it

pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 8 recites "the step of disabling reading and writing of the program memory

chip comprises <u>maintaining control device stability</u>." It is not clear what constitutes

"maintaining control device stability," and how the control stability can be maintained.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on
sale in this country, more than one year prior to the date of application for patent in the United States.

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

9.   Claims 1-4, 6-7 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated

by Charron (US 6,732,274).

As to claim 1, Charron discloses **a method of protecting a program memory**

device including program memory content [Electronic Apparatus Comprising a

memory Protection Device and method of Protecting Data in a memory (title)], **wherein**

the program memory content is associated with a previously stored signature [a

signature (a random number) is stored as a personality data in a memory (abstract;

column 15, claim 1)], **the method comprising**:

automatically disconnecting [normally when the device is switched on, the control

device (the electronic circuit, figure 1, 15) is prohibited from interacting with the

EEPROM (the program memory device) until the signature verification is confirmed

(column 3, lines 40-50; figure 4). Hence the program memory and the control device

are essentially disconnected from each other] **the program memory device** [the

EEPROM, figure 1, 28] **from a control device** [the electronic circuit, figure 1, 15] **that**

is operationally dependent upon the program memory device [the operations of

the electronic circuit as well as the entire apparatus (a mobile radio telephone station)

depend on the content of the EEPROM];

halting the control device [normally when the device is switched on, the control

device (i.e., the electronic circuit) is prohibited from interacting with the EEPROM (the

program memory device) until the signature verification is confirmed (column 3, lines

40-50; figure 4)];

verifying whether a present signature is equivalent to the previously stored

signature to obtain a verification result [(column 3, lines 40-50; figure 4)]; **and**

based on the verification result, performing one of [(column 3, lines 40-50; figure

4)]:

disabling reading and writing of the program memory device [if the values are

different, box K18 is proceeded to which stops the process of switch-on (column 3,

lines 40-50; figure 4)]; **or**

automatically reconnecting the program memory device to the control device [if

the values are identical, the apparatus operates as it should be (column 3, lines 40-50;

figure 4)].

As to claim 2, Charron discloses that **the step of verifying comprises**:

independently computing a binary content verification of the program memory

content [determining the digital value supplied by the generator (column 3, lines 40-50;

figure 4, step K10); Charron further teaches, via referencing Brunner (US 4,727,544), a

signature encoding method that determines the personality data (signature) consisting

of determining a checksum based on the contents of the memory to be protected

(column 1, lines 26-39)] ; **and**

comparing the previously stored signature with the binary content verification

[(column 3, lines 40-50; figure 4)].

As to claim 3, Charron discloses that **the step of independently computing the**

binary content signature comprises storing the binary content signature in a

secure memory device [the digital value of the signature is written to a location in the

EEPROM (column 3, lines 35-39)].

As to claim 4, Charron discloses that **the secure memory device is a securely**

enclosed unit that is tamperproof and that has electrical connections available

for connection with the program memory device [the apparatus (i.e., the security

memory device) is enclosed in a portable radio mobile station (column 1, lines 15-20;

column 2, lines 45-60); figure 1].

As to claim 6, Charron discloses that **the protecting is performed**

automatically and without manual intervention [the user does not notice a thing

(column 3, lines 40-50; figure 4)].

As to claim 7, Charron discloses that **the protecting is performed dynamically**

while the program memory device is being accessed by the control device

[column 3, lines 40-50; figure 4].

As to claim 10, Charron discloses that **the step of disabling reading and**

writing of the program memory device comprises preventing unauthorized

programming of the program memory device [column 3,lines 6-16; column 3, lines

40-50; figure 4].

Claim Rejections - 35 USC § 103

10.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

11.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Charron

(US 6,732,274).

As to claim 5, Charron does not teach that **the binary content signature is a**

binary bit-for-bit copy of the program memory content of the first time period,

and the binary content verification is another binary bit-for-bit copy of the

program memory content of the second time period, although Charron does teach

that a checksum based on the contents of the memory to be protected may be

calculated to provide the binary content signature (column 1,lines 26-39). Further, it is

well known that the utilization of a signature such as a checksum is to save the storage

space needed for the signature by avoiding storing the entire contents of the memory

to be protected. On the other hand, a binary bit-by-bit copy of the program memory

content, although requires a much larger storage space compared to a checksum, represents the utmost and the best duplication of the original information as far as verification is concerned. Therefore, it would have been obvious for ones of ordinary skills in the art at the time of Applicants' invention to recognize the advantage of using a binary bit-by-bit copy of the program memory content as a basis of content verification, and to incorporate it as an additional option into the existing scheme disclosed by Charron to further improve the accuracy of the content verification.

12.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Charron (US 6,732,274), and in view of Schlotter et al. (US 3,827,029).

With respect to claim 9, Charron does not teach that **the method of claim 1, further comprising: disabling reading and writing of a first portion of the program memory device; and**

maintaining a second portion of the program memory device in an active state.

However, Schlotter et al. disclose in their invention "Memory and Program Protection System for a Digital Computer System" a memory protect subsystem by defining a memory region to be protected and any attempt to access the data within the protected region is disabled while attempts to access the data outside the protected region are allowed to proceed [column 3, lines 3-15; column 4, lines 3-28].

A memory protection system that disables accessing to one region while permitting accessing to another allows the system continues to perform certain functions based on the active memory space (e.g., the operating system) while protecting vital data storing in the disabled region, as demonstrated by Schlotter et al.

Therefore, it would have been obvious for ones of ordinary skills in the art at the

time of Applicants' invention to recognize the benefits such a scheme, and to

incorporate it into the existing system disclosed by Charron to further enhance the

performance of the system.

13.   *Related Prior Art*

The following list of prior art is considered to be pertinent to applicant's invention,

but not relied upon for claim analysis conducted above.

- Martin, (US 5,729,212), "Gaming Device Providing High Security

  Communications with a Remote station."

- Wess et al., (WO 98/52664), "Gaming Device Security System: Apparatus and

  Method."

- Olarig et al., (US 6,009,524), "Method for the Secure Remote Flashing of a BIOS

  Memory."

- Mattison, (US 5,778,070), "Method and Apparatus for Protecting Flash Memory."

- Cragon et al., (US 3,573,855), "Computer memory Protection."

                                  Conclusion

14.   Claims 1-10 are rejected as explained above.

Claims 36-73 are withdrawn from consideration as being directed to a non-

elected invention.

15.   THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheng-Jen Tsai whose telephone number is 571-272-4244. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheng-Jen Tsai
Examiner
Art Unit 2186

November 3, 2005

PIERRE BATAILLE
PRIMARY EXAMINER
11\05\05